REMARKS

This paper is being provided in response to the Office Action dated September 4, 2009, for the above-referenced application. In this response, Applicants have cancelled claims 74-91 (claims 1-28, 31, 32, 47, 48, 63 and 64 having been previously cancelled) without prejudice or disclaimer of the subject matter thereof, and amended claims 29, 30, 33, 37-39, 41-46, 49, 52-55, and 57-61 to clarify that which Applicants consider to be the presently-claimed invention. Applicants respectfully submit that the amendments to the claims are fully supported by the originally-filed specification, consistent with the discussion herein.

The rejection of claim 29 under 35 U.S.C. 112, first paragraph, has been addressed by amendments provided herein and is otherwise hereby traversed. At the top of page 3, the Office Action indicates that the specification does not describe the feature recited in claim 29 of using the first information and the record stored on the at least one storage system to retrieve the second information specifying the previously-defined retention period for the unit of data. Applicants disagree. As discussed in the present application (see, for example, page 10, lines 21-30), a set of classes may be defined for retention periods to be assigned to units of data to facilitate the changing of retention periods for large groups of data units. The system maintains a record that associates each class with a specified retention period (second information). When a host computer sends a request to store a unit of data on the storage system, it may indicate the corresponding retention indirectly by specifying the class (first information) to which the unit of data belongs. Thus, for the exemplary embodiment described on page 10, the retention period for a class may be considered the second information and the class identifier associated with a unit of data may be considered the first information.

Accordingly, for reasons set forth above, Applicants respectfully request that this rejection be withdrawn.

The rejection of claims 29, 30, 33-46, 49-62 and 65-91 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent App. Pub. No. 2005/0055518 to Hochberg, et al. (hereinafter "Hochberg") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein. Claims 74-91 have been cancelled herein.

Independent claim 29, as amended herein, recites a method of processing data in a computer system comprising at least one host and at least one storage system. The method includes receiving a request, from the host, to delete a unit of data stored on the storage system. In response to the request, it is determined whether a previously-defined retention period for the unit of data has expired. The determination includes retrieving first information, associated with the unit of data, that identifies second information specifying the previously-defined retention period for the unit of data, where the first information is separate from the second information and includes information identifying a retention class to which the unit of data belongs, where the second information is the previously-defined retention period for the retention class that defines a period of time during which units of data belonging to the retention class cannot be deleted from and/or modified on the at least one storage system, and where the at least one storage system stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes. The determination further includes using the first information and the record stored on the at least one storage system to retrieve the second information

specifying the previously-defined retention period for the unit of data. When it is determined that the retention period for the unit of data has not expired, the request to delete the unit of data is denied. Claims 30 and 33-44 depend directly or indirectly from independent claim 29.

Independent claim 45, as amended herein, recites at least one computer readable medium encoded with instructions that, when executed on a computer system, perform a method of processing data, the computer system comprising at least one host and at least one storage system. The method includes receiving a request, from the host, to delete a unit of data stored on the storage system. In response to the request, it is determined whether a previously-defined retention period for the unit of data has expired. The determination includes retrieving first information, associated with the unit of data, that identifies second information specifying the previously-defined retention period for the unit of data, where the first information is separate from the second information and includes information identifying a retention class to which the unit of data belongs, where the second information is the previously-defined retention period for the retention class that defines a period of time during which units of data belonging to the retention class cannot be deleted from and/or modified on the at least one storage system, and where the at least one storage system stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes. The determination further includes using the first information and the record stored on the at least one storage system to retrieve the second information specifying the previously-defined retention period for the unit of data. When it is determined that the retention period for the unit of data has not expired, the request to delete the unit of data is denied. Claims 46 and 49-60 depend directly or indirectly from independent claim 45.

Independent claim 61, as amended herein, recites a storage system including at least one storage device to store a unit of data and at least one controller. The controller is adapted to receive a request to delete the unit of data; and in response to the request, determine whether a retention period for the unit of data has expired. The determination includes retrieving first information, associated with the unit of data, that identifies second information specifying the previously-defined retention period for the un it of data, where the first information is separate from the second information and includes information identifying a retention class to which the unit of data belongs, where the second information is the previously-defined retention period for the retention class that defines a period of time during which units of data belonging to the retention class cannot be deleted from and/or modified on the at least one storage system, and where the at least one storage device stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes. The determination further includes using the first information and the record stored on the at least one storage device to retrieve the second information specifying the previously-defined retention period for the unit of data. When the controller determines that the retention period for the unit of data has not expired, the request to delete the unit of data is denied. Claims 62 and 65-73 depend directly or indirectly from independent claim 61.

Hochberg discloses a method, system and program for retention management and protection of stored objects. The Office Action cites principally to Figure 8 of Hochberg which shows operations of an archive program to handle a request to delete an archived object. Hochberg discloses that, when a request to delete an object is received, the object is deleted only

if the retention period for the object ID has expired. The system accesses the expiration entry for the object in the expiration table and determines whether the current time minus the retention period start exceeds the retention period for the object. (See paragraph 0046 of Hochberg.)

In Applicants' independent claims, Applicants recite, in some form, the features of retrieving first information, associated with the unit of data, that identifies second information specifying the previously-defined retention period for the unit of data, where the first information is separate from the second information and includes information identifying a retention class to which the unit of data belongs, where the second information is the previously-defined retention period for the retention class that defines a period of time during which units of data belonging to the retention class cannot be deleted from and/or modified on the at least one storage system, and where the at least one storage system stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes, and using the first information and the record stored on the at least one storage system to retrieve the second information specifying the previously-defined retention period for the unit of data. As discussed by Applicants, for example, on page 10, lines 21-30, a set of classes may be defined for retention periods to be assigned to units of data to facilitate the changing of retention periods for large groups of data units. The system may maintain a record that associates each class with a specified retention period. When a host computer sends a request to store a unit of data on the storage system, it may indicate the corresponding retention indirectly by specifying the class to which the unit of data belongs. The retention period for an entire class of data units may be changed by altering the retention period specified for the class. Applicants have found this to be advantageous, in that a large class of data units can have their retention periods altered by simply updating the

record for the class, and without individually altering the retention period of each unit of data in the class.

The Office Action cites to paragraph 0023 of Hochberg as disclosing the recited features of accessing the record on the storage system to retrieve the previously-defined retention period. However, applicants respectfully submit that this cited portion of Hochberg, nor any other portion thereof, teaches or fairly suggests the above-noted features claimed by Applicants. Specifically, paragraph 0023 of Hochberg discloses that a deletion hold policy may be specified for an object to override a retention policy in order to prevent removal of an object, even if the object has expired according to a defined retention period. The deletion hold applied to an archived object may subsequently be removed to allow that object to expire according to the archival policy defined for that object. Applicants submit, however, that application of a deletion hold policy as described by Hochberg does not teach or fairly suggest the use of a record stored on a storage system that associates a plurality of previously-defined retention periods with a plurality of retention classes, and which may be used, in connection with first information including identification of a retention class of a unit of data, to retrieve second information specifying the previously-defined retention period for the unit of data where the second information is separate from the first information. In particular, as discussed above, this system described and recited by Applicants advantageously allows for the retention period for an entire class of data units to be changed by altering the retention period specified for the class, and thereby, large numbers of data units can have their retentions periods by simply updating the record on the storage system, i.e. modifying the retention periods for the one or more classes of the data, and without individually altering the retention period of each unit of data in the one or more classes. Hochberg's above-noted system involving
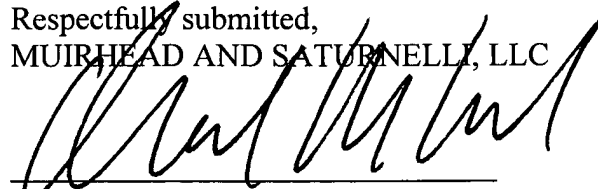
the deletion hold policy, or other archival policies of Hochberg, does not provide for these features, or the advantages thereof, like that recited by Applicants.

Furthermore, the claims, as amended herein, specifically recite that the second information (e.g., retention policy associated with a class) is separate from the first information (e.g., a class associated with a data unit). In contrast, Hochberg discloses no such separation but, instead, directly associates a retention policy and/or a deletion hold policy for each object. Thus, changing the policy for a group of objects in Hochberg would be performed for each object, one at a time. In contrast, for the present claimed invention, separation of the first and second data makes it is possible to change the retention policy for a group of objects, no matter how many, using one operation to change the second information (retention policy) for an entire class associated with the group of objects.

Accordingly, for reasons set forth above, Applicants respectfully submit that Hochberg does not teach or fairly suggest at least the above-noted features as recited by Applicants. Accordingly, Applicants respectfully request that the rejection be reconsidered and withdrawn.

Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

Respectfully submitted,
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